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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/044,434	01/11/2002	Peter A. Warren	FM-169J	9313

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12/12/2007

EXAMINER
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A, PHI DIEU TRAN

ART UNIT	PAPER NUMBER
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3633

MAIL DATE	DELIVERY MODE
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12/12/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/044,434	Applicant(s) WARREN, PETER A.	
	Examiner Phi D. A	Art Unit 3633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 07 October 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 22-71 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 22-71 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>10/1/07</u> .   | 6) <input type="checkbox"/> Other: _____                          |

*Continued Examination Under 37 CFR 1.114*

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/1/2007 has been entered.

Claim Rejections - 35 USC § 103 1.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action: (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 22-43, 46, 50-71 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ronden (4078867) in view of Palmer (1971500) and Egres Jr. (6016848).

Ronden (figure 1) shows a foldable member comprising at least a first tube (4).

Ronden does not show the tube being made of a layers of material, at least one predetermined hinge area along the length of the first tube, a plurality of opposing elongated slots in the tube through the layers of material forming separated longitudinal strips of tube material between the slots which fold when subjected to localized buckling forces.

Palmer discloses a tube (4) having at least one predetermined hinge area along the length of the first tube, a plurality of opposing elongated slots in the tube through the layer of material forming separated longitudinal strips of tube material between the slots which fold when subjected to localized buckling forces.

Egres discloses a tube made of layers of material to withstand repeated flexing due to bending.

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Ronden's structure to show the tube being made of layers of material since it enables the tube to withstand repeated flexing due to bending as taught by Egres, and having the tube with at least one predetermined hinge area along the length of the first tube, a plurality of opposing elongated slots in the tube through the layer of material forming separated longitudinal strips of tube material between the slots which fold when subjected to localized buckling forces would enable the tubular member to more easily bend when needed as taught by Palmer.

Ronden as modified further shows at least one predetermined hinge area along the length of the first tube, a plurality of opposing elongated slots in the tube through the tube material forming separated longitudinal strips of tube material between the slots which fold when subjected to localized bucking forces, a plurality of opposing slots, at least four slots, one set of two slots opposing another set of two slots, each slot of each set of elongated slots separated longitudinally along the length of the tube from each adjacent slot by a bridge element of tube material, the opposing sets of slots being diametrically opposed from each other, each slot in each set of slots is diametrically opposed from a slot in the opposing set of slots, two sets of slots and two slots in each set of slots, a stress relieving element (the edge of the slot the interior

surface) attached to each bridge element on the inside of the tube, a plurality of hinge areas spaced from each other along the length of the tube, each hinge area including opposing sets of elongated slots, an electrical conductor(4) disposed in the tube, at least one transducer device(the ground ) located proximate the hinge area for controlling the folding of the longitudinal strips of tube material, slot reinforcement members (the reinforcing members being the bridges), four slots in each set of slots and each slot of a pair of the four slots opposing another slot, a collapsible structure comprising a plurality of joined members (the members being the different sections of the tube joined together forming the tube ).

Per claims 27, 37-39, 57, 64, 70-71, Rondenl as modified shows the layers of material are laminated to each other except at the predetermined hinge area, the tube being made of a plastic material, the tube being made of a composite material, the composite material including a triaxial braid of fibers in a resin matrix (col 6 line 26, Egres Jr.), the plurality of longitudinal strips being multi-ply.

Per claims 23-26, 53-56, 60-63, Ronden et al as modified shows all the claimed limitations including the first tube including a sheet of plastic material wrapped around itself several times forming the layers of tube material.

Per claims 24-26, 54-56, 60-64, Ronden as modified shows an adhesive securing the layers of plastic material to each other at selected locations along the length of the tube and the adhesive being a tape (inherently so the layers of plastic material each is an adhesive tape), the sheet of plastic material comes from a roll of plastic stock material with the fibers impregnated with resin and having a round memory (when cured).

3. Claim 47 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ronden (4078867) in view of Palmer (1971500) and Egres Jr. (6016848) as applied to claim 40 above and further in view of Richards et al.

Ronden as modified shows all the claimed limitations except for each slots having a reduced diameter portion.

Richards et al discloses slots having a reduced diameter portion.

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Ronden's modified structure to show each slots having a reduced diameter portion as taught by Richards et al since it would have been an obvious matter of engineering design choice to have the slots being oval as they function the same to provide for weakening of the tube member at the slot areas. Ronden as modified shows the slots (diamond or triangular) having a reduced diameter portion.

4. Claims 44-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ronden in view of Palmer and Egres Jr (6016848).

Ronden as modified shows all the claimed limitations except for the slots being triangle shaped, or diamond shaped.

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Ronden's modified structure to show the slots being triangle shaped, or diamond shaped because triangular; diamond, rectangular, or oval shaped slots are well known shapes for slots.

5. Claims 48-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ronden in view of Egres Jr (6016848) and Palmer as applied to claim 40 and further in view of Sorenson (5598598).

Ronden as modified shows all the claimed limitations except for a second tube disposed inside the first tube, the second tube including opposing sets of elongated slots at the hinge area thereof.

Sorenson shows a second tube(60) disposed inside the first tube(32) to strengthen the tubular structure.

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Ronden's modified structure to show a second tube disposed inside the first tube because it would strengthen the tubular structure as taught by Sorenson.

Per claim 49, Ronden as modified shows the second including opposing sets of elongated slots at the hinge area thereof.

#### Response to Arguments

Applicant's arguments filed 10/1/2007 have been fully considered but they are moot in view of the new ground of rejection.

#### *Conclusion*

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art shows different folding structures.

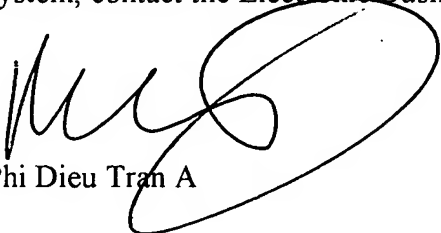
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phi D A whose telephone number is 571-272-6864. The examiner can normally be reached on Monday-Thursday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Chilcot can be reached on 571-272-6777. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Phi Dieu Tran A

12/9/07